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Extension Service

Pesticide and Fertilizer Spills and Accidents

Preventative Measures to Protect Ground and Surface Water

Two pounds of pesticide, evenly distributed in an aquifer, could contaminate 10 million gallons of water. The cost of cleanup, health concerns and economics are strong incentives to prevent pesticide and fertilizer spills. Everyone hopes to never face an emergency. Yet, even a facility that is well constructed, well operated and well maintained may have problems. Equipment fails, people make mistakes and spills or fires may occur. While the timing of these occurrences cannot be predicted, a well conceived response to an accident can keep a small problem from turning into a big one. There are actions and best management plans that will prepare you to respond effectively to an emergency situation such as a pesticide or fertilizer accident or spill.

Preventing Spills

Prevention, of course, is the best strategy. The following are examples of preventative pesticide and fertilizer spills best management practices to protect ground and surface water.

- ✓ Mix and load chemicals away from water supplies, including wells, ponds, and streams. Also, avoid depressional areas and abandoned wells that have not been sealed properly.
- ✓ Never leave a spray tank unattended while it is being filled. If the tank overflows, you may end up with contaminated puddles on the ground or chemicals in the nearest water source.
- ✓ Maintain application equipment to avoid leaky hose connections and worn spots, which could break and spill chemicals.
- ✓ Clean mixing, loading, and application equipment away from all water supplies. If possible, clean equipment over a concrete pad equipped with a sump to catch rinse water containing pesticides. The collected water can be used as a carrier in future pesticide applications.
- ✓ Use anti-siphoning devices, such as check valves, to prevent the tank spray mixture from back siphoning down the hose into a water source— a stream, pond, or well.
- ✓ Consider a closed-system mixer and loader. Closed systems meter and transfer pesticide products directly from the shipping container to the mixing or application tanks, reducing the risk of a spill. Closed systems often rinse the containers as well, and they provide greater accuracy in measuring the chemical dosage. However, mechanical failures such as hose breaks may occur more frequently with a closed system. Also, keep in mind that anti-siphoning devices are still essential with a closed system.
- ✓ If you use an emulsifier or spreader-sticker, add it before the tank is full. These materials tend to create foaming which could cause the chemical to overflow onto the ground.

Emergency Response

At least one person at a site where agricultural chemicals are being manufactured, stored or used should be able to initiate and coordinate emergency response activities in the event there is a spill or accidental release. All employees at these sites should be familiar with waste handling and emergency response procedures.

The initial response to an agricultural chemical spill should be to determine what has been spilled and the safety measures needed to respond so that further damage isn't caused by an inappropriate response. *Contain the spill.* Next, the appropriate persons or agencies should be notified of the spill. The Montana Department of Agriculture should be notified immediately at 1-406-444-2944 by the person responsible for an agricultural chemical spill. The Montana Hazardous Materials Emergency Response System should also be contacted immediately at 1-800-426-9440 or 1-406-444-6911. The Disaster Emergency Service will then notify the appropriate agency of the spill. The National Response Center should be contacted at 1-800-424-8802 if a spill occurs that threatens human health or has reached surface water.

Spill Reporting

When you notify authorities of an emergency, have in mind your response and cleanup procedures. The spill report should include the following:

- Name and telephone number of the contact person at the farm, dealership or facility where the spill occurred
- Location of the spill and if water is threatened
- Name or type of product spilled
- Toxicity of the product
- Estimated quantity spilled
- Extent of any injuries or exposure
- Cause of the spill or fire
- Action taken to control and contain the spill or fire
- Planned cleanup procedures, evacuation and other precautions
- When the spill occurred
- Wind speed and direction if applicable.

Record Keeping

A complete system of records helps prove a facility is well run and could be important toward limiting liability in the event of an accident. Record keeping forms should, whenever possible, be filled out during the task being performed or immediately after, to keep mistakes to a minimum. Also, the greater the detail provided on each form, the easier it will be to recall the actual event if called upon later.

Another reason for keeping good records is for insurance and liability purposes. Insurance carriers may want records to confirm practices and show how risks were minimized.

Spill Response

Even when proper procedures are followed, pesticide and fertilizer spills may occur. The way a spill is handled depends on whether the product can be recovered and reused or if the material is unusable and therefore a waste. Spills that can be easily recovered and reused are transferred to a labeled container and stored until the product can be used according to label directions. Spills that cannot be easily recovered may take longer to clean up and the material collected may not be able to be used as it was originally intended. This material will be considered a waste product and must be disposed of properly. Know ahead of time what steps to take when a pesticide or fertilizer spill occurs.

Place spill cleanup supplies and equipment in a well marked, accessible location in or near the storage area. Sufficient quantities of these supplies and equipment should be available to contain and clean up twice the volume of the largest container.

Control and Contain the Spill

Control the spill, but do not endanger yourself by being inadvertently exposed to the product. Personal safety is the most important issue. Proper safety equipment must always be worn when handling spills. Put on safety equipment first — then deal with the spill. Identify the source of the spill and control it, preventing further spillage. Once the spill has been controlled, contain it with a dike of soil, sand, chemical absorbents, granules or booms. It is particularly important to not allow any product to get into a water channel or body of water, including storm sewers, sanitary sewers or septic tanks.

Cleaning Spills

The final phase in an emergency response plan is to implement cleanup procedures to remove the pesticide and fertilizer from ground and/or surface water and to remove any contaminated materials or soil from the site.

- ✓ Under certain circumstances, you should report the spill to the proper authorities. The decision to notify authorities depends on the size of spill, what pesticide or fertilizer was spilled, state regulations and potential threats to human health or the environment. For instance, notify state and local authorities if the spill reaches a stream, pond or other water source. To determine when you must notify authorities, check with your local emergency response agency.
- ✓ Always keep materials for containing a spill close at hand. Know ahead of time what to do to contain a spill of the particular pesticide and fertilizer you're using.
- ✓ If you have spilled a liquid pesticide, cover the spill area completely with a material that will absorb the pesticide: activated charcoal, adsorptive clay, vermiculite, pet litter, sawdust or specialized pesticide-absorbent materials. Use enough material to soak up the liquid. However, do not use sawdust or sweeping compounds if the pesticide is a strong oxidizer. This combinatio presents a possible fire hazard. The label or the Materials Safety Data Sheet for that product should indicate whether the pesticide is a strong oxidizer or is highly flammable.
- ✓ Do not hose down the area. Water will simply spread the pesticide, creating a wider area of contamination.
- ✓ Sweep or shovel contaminated material into a leakproof drum.
- ✓ In some cases, you should cover the area with a compound that neutralizes the pesticide. It all depends on the pesticide spilled, so contact the emergency response agency or the manufacturer to find out when to use a neutralizing compound.
- ✓ After removing contaminated material and possibly putting down a neutralizing compound, test the soil. If the soil is still contaminated, continue to remove contaminated material and put it into a leakproof drum. Then test the soil again.
- ✓ Dispose of the contaminated water or soil according to Environmental Protection Agency procedures.

Preventative Measures To Protect Ground and Surface Water

Best management practices must be used to prevent agricultural chemical spills and accidents and protect ground and surface water.

- ✓ Have an inventory of materials stored.
- ✓ Have a facility contingency plan for procedures to be followed in the event of a fire or catastrophic event. Give the local fire department a copy of your plan.
- ✓ Clearly label exits and emergency equipment.
- ✓ Educate employees on the plan and prepare them for any emergencies.
- ✓ In the event of a pesticide or fertilizer spill, emergency response actions must be implemented immediately.
- ✓ Contain the pesticide or fertilizer spill as soon as possible.
- ✓ Notify the proper agencies. Cleanup and remediation procedures should be implemented promptly.

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